

MULTIPLY-INTEGRATED SYSTEM FOR PRODUCT INVENTORY, SALES, AND DISTRIBUTION

Applicant: Eimar M. Boesjes
BMH, Inc.
1754 Moonshadow
Eugene, OR 97405

FIELD OF THE INVENTION

[0001] The field of the present invention relates to systems for product inventory, sales, and distribution. In particular, systems and methods are described herein for multiply-integrated product inventory, sales, and distribution.

BACKGROUND

[0002] Fig. 1A is a schematic block diagram of a traditional system for inventory, sales, and distribution of products. Such a traditional system is vertically integrated and highly hierarchical, with most entities filling only limited roles in the overall system. Product manufacturers 110 are located at the top of the hierarchy, and send products primarily to distributors 120 and sometimes also to product retailers 130 as requested. The distributors 120 represent a primary repository for product inventory in the system. Some product retailers 130 may obtain product inventory directly from product manufacturers 110, but most typically obtain product inventory from product distributors 120 as required to maintain in-store stock (i.e., a “local inventory”) in a physical store, and/or to ship to remotely-ordering (catalog, phone, online) retail product purchasers (remote inventory). Product retailers 130 are typically the primary interface between the system and a product purchaser 140 (typically a retail consumer). In some instances a product retailer 130 may arrange to have ordered products shipped directly from a product distributor 120 (i.e., from a “remote inventory”) to a product purchaser 140 (either with or without the purchaser being aware of this). This variation of the traditional system is known as consumer direct fulfillment (CDF; Fig. 1B). Product manufacturers 110 may sometimes also offer consumer direct fulfillment.

[0003] As mentioned above, the traditional system for inventory, sales, and distribution of products is highly “vertically” integrated. Products predominantly flow downward through the

1 hierarchy, while revenue flows predominantly upward. For a group of entities offering products
2 within a common product category (i.e., music, video, books, software, clothing, furniture,
3 sporting goods, and so on), each entity in the hierarchy typically does not interact with other
4 members of the same level (no “horizontal” or “lateral” integration of the system), and typically
5 interacts with only one or a few members of the one or two next higher levels (little “diagonal”
6 integration). Traditional notions of competition in commerce tend to limit an entity’s
7 willingness to interact “horizontally”. Each entity of the traditional system often plays only a
8 single role (product manufacturer, product distributor, or product retailer) The systems of Figs.
9 1A and 1B are somewhat static, and slow to respond to changing market conditions, sales trends,
10 and/or product demand patterns. Each participating entity of the system (particularly the product
11 retailers, especially individual local or regional retailers that are not part of a chain) has only
12 limited opportunities for realizing improved economies of scale in its acquisition/inventory/
13 sales/distribution of products, since its interactions with other entities in the system are typically
14 limited.

15 **[0004]** The somewhat modified traditional systems shown in Fig. 1C and 1D are typical of the
16 music, entertainment, and/or publishing industries, and include content providers 105 (i.e.,
17 musicians, studios, authors, production companies, and so on). In the publishing industry,
18 publishing houses are product manufacturers 110 and represent authors (the content providers
19 105 in this example). Book wholesalers may serve as product distributors 120, and retail
20 bookstores (physical and/or online) are the product retailers 130. Books and other publications
21 flow down through the hierarchy, while revenue flows upward. One participating entity may
22 participate at more than one level of the hierarchical system (publisher/wholesaler,
23 distributor/retailer, publisher/retailer, or even publisher/distributor/ retailer), but there are few if
24 any “horizontal” exchanges or interactions in this scenario. Products eventually reach individual
25 stores, which may comprise physical stores visited by retail customers to purchase and/or order
26 published products, or may receive remotely-placed orders from customers via catalog, phone, or
27 online (via Internet and so forth). Published-product purchasers 140 may obtain purchased
28 products directly from a product retailer 130 (fulfillment from local inventory; Fig. 1C) or by
29 “drop shipment” from a product distributor 120 (fulfillment from remote inventory; CDF; Fig.
30 1D). Manufacturers 110, distributors 120, or even content providers 105 may act directly as

1 product retailers and/or offer consumer direct fulfillment, particularly in an online sales
2 environment.

3 **[0005]** In the music/entertainment industry, a more complex situation exists. Musicians
4 (content providers 105) are often associated with record labels, which in turn may operate
5 independently or be associated with one of the roughly five major distribution houses (which
6 form an oligopoly) or one of several secondary or regional distributors. The actual product to be
7 sold (DVD, CD, tape, other media, digital file, and so forth) may be manufactured by the
8 musician(s), the label, the major distribution house or other distributor, or even contracted out.
9 Any of these entities may therefore serve as a product manufacturer, and/or may also serve as a
10 product distributor. The product distributors 120 (independent label, distribution house, other
11 distributor, etc) in turn ship products to individual record stores, which fill the role of product
12 retailers 130. The record stores may be physical stores visited by retail customers to purchase
13 (from local inventory) and/or order music products, and/or may receive remotely-placed orders
14 from customers via catalog, phone, or online (via Internet and so forth). The retail store may
15 fulfill orders itself (orders placed locally at a physical store or remotely; fulfillment from local
16 inventory; Fig. 1C), or may have the ordered music products "drop shipped" directly from a
17 distributor to the retail purchaser (fulfillment from remote inventory; CDF; Fig. 1D). The music
18 purchaser need not be aware of the participation of the distributor. Music products flow
19 downward through the hierarchy and revenue flows upward, with few if any "horizontal"
20 exchanges between entities within the same level of the hierarchy. Similarly complex
21 hierarchical relationships exist for other areas of the entertainment industries among studios,
22 production companies, distributors, retail outlets, and so forth.

23 **[0006]** The existence of a significant market for used, rare, so-called private label, and/or other
24 non-standard music products is an additional variation that may be imposed on the systems
25 depicted in Figs. 1C and 1D (often referred-to as "non-catalog" products in the music industry).
26 Many local/regional retailers (but often not larger chains) will purchase used music products
27 from retail customers. The inventory of used products available for retail re-sale is generally
28 restricted to being offered only to purchasers within the reach of the acquiring retailer, with little
29 or no opportunity for wider availability. Conversely, there is little or no opportunity for a
30 local/regional retailer to offer a wider selection of used products than its own local inventory.
31 Some local/regional retailers may enter into agreements with local/regional musicians to produce

1 music products on a local/regional level and generally offered for sale only from the local
2 inventory of the local/regional retailer. Few opportunities exist for a retailer to offer such so-
3 called private-label products of other retailers. Similar limitations are encountered when
4 offering out-of-production, collectible, rare, or otherwise non-standard products.

5 **[0007]** It is therefore desirable to provide systems and methods for providing multiply-
6 integrated product inventory, sales, and distribution. A “multiply-integrated system” is meant to
7 include “vertical” (between participants in differing levels), “horizontal” (between participants
8 within the same level), and “diagonal” (between a participant of a level and many participants in
9 other levels) interactions between participants in the system, wherein each participant offers
10 products for distribution and/or sale within a common product category or class (examples: a
11 group of participating music/video suppliers; a group of participating book/ magazine suppliers;
12 a group of participating furniture suppliers; a group of participating software suppliers; a group
13 of participating sporting goods suppliers; and so forth). It is desirable to provide multiply-
14 integrated systems and methods wherein product identification, product inventory, product
15 pricing, order, and/or sales information for multiple participants in the system is gathered into
16 system databases for enabling integration of the system. It is desirable to provide a multiply-
17 integrated system for inventory, sales, and distribution of products wherein any participant in the
18 system may act in multiple capacities within the system (i.e., as a product manufacturer, a
19 product distributor, and/or a product retailer). It is desirable to provide multiply-integrated
20 systems and methods for enabling exchanges of products and/or revenues between any
21 participants in the system, including “horizontal” exchanges. It is desirable to provide multiply-
22 integrated systems enabling participants in any level of the hierarchical system to accept orders
23 from product purchasers. It is desirable to provide multiply-integrated systems and methods
24 enabling participants in any level of the hierarchical system to provide consumer fulfillment
25 (direct or indirect) for orders placed with participants in any hierarchical level, particularly
26 retailer-to-retailer consumer fulfillment. It is desirable to provide multiply-integrated systems
27 and methods enabling rapid adjustment of product inventory (local and/or remote inventory)
28 and/or product pricing to changing market conditions, sales trends, and/or product demand
29 patterns. It is desirable to provide multiply-integrated systems and methods enabling
30 participants in the system, particularly product retailers, to realize improved economies of scale.
31 It is desirable to provide multiply-integrated systems and methods to enable a participant in the

1 system to pool inventories and/or orders of physical and online operations in real time to
2 leverage improvements in efficiencies in the system. It is desirable to provide multiply-
3 integrated systems and methods to enable multiple participants in the system to pool inventories
4 and/or orders in real time to leverage improvements in efficiencies in the system. It is desirable
5 to provide multiply-integrated systems and methods enabling real-time automated order
6 fulfillment, pricing adjustments, inventory adjustments, and/or other adjustments to the
7 distribution and/or flow of products and revenue to/from/within the system. It is desirable to
8 provide multiply-integrated systems and methods enabling a participant in the system to
9 selectively interact with other participants in the system. It is desirable to provide multiply-
10 integrated systems and methods enabling a participant in the system to maintain independence
11 and autonomy. It is desirable to provide multiply-integrated systems and methods enabling
12 participants, particularly local/regional product retailers, to offer a wider array of non-standard
13 products, and to offer their own non-standard products to a wider group of potential purchasers.

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SUMMARY

[0008] Certain aspects of the present invention may overcome one or more aforementioned drawbacks of the previous art and/or advance the state-of-the-art of systems for product inventory, sales, and distribution, and in addition may meet one or more of the following objects:

[0009] To provide systems and methods for providing multiply-integrated product inventory, sales, and distribution for participating product suppliers each offering products of a common product category or class;

[0010] To provide multiply-integrated systems and methods wherein inventory, pricing, order, and/or sales information for multiple participants in the system is gathered into system databases for enabling integration of the system;

[0011] To provide a multiply-integrated system for inventory, sales, and distribution of products wherein any participant in the system may act in multiple capacities within the system (i.e., as a product manufacturer, a product distributor, and/or a product retailer;

[0012] To provide multiply-integrated systems and methods for enabling exchanges of products and/or revenues between any participants in the system, including “horizontal” exchanges;

[0013] To provide multiply-integrated systems enabling participants in any level of the hierarchical system to accept orders from product purchasers;

[0014] To provide multiply-integrated systems and methods enabling participants in any level of the hierarchical system to provide consumer direct fulfillment for orders placed with participants in any hierarchical level, particularly retailer-to-retailer consumer fulfillment;

[0015] To provide multiply-integrated systems and methods enabling rapid adjustment of inventory and/or pricing to changing market conditions, sales trends, and/or product demand patterns;

[0016] To provide multiply-integrated systems and methods enabling participants in the system, particularly product retailers, to realize improved economies of scale;

1 **[0017]** To provide multiply-integrated systems and methods to enable a participant in the
2 system to pool inventories and/or orders of physical and online operations in real time
3 to leverage improvements in efficiencies in the system;

4 **[0018]** To provide multiply-integrated systems and methods to enable multiple participants in
5 the system to pool inventories and/or orders in real time to leverage improvements in
6 efficiencies in the system;

7 **[0019]** To provide multiply-integrated systems and methods enabling real-time automated
8 order fulfillment, pricing adjustments, inventory adjustments, and/or other adjustments
9 to the distribution and/or flow of products and revenue to/from/within the system;

10 **[0020]** To provide multiply-integrated systems and methods enabling a participant in the
11 system to selectively interact with other participants in the system;

12 **[0021]** To provide multiply-integrated systems and methods enabling a participant in the
13 system to maintain independence and autonomy; and

14 **[0022]** To provide multiply-integrated systems and methods enabling participants, particularly
15 product retailers, to offer a wider array of non-standard products, and to offer their own
16 non-standard products to a wider group of potential purchasers.

17 **[0023]** One or more of the foregoing objects may be achieved in the present invention by a
18 system comprising a supplier database, an order database, and a programmed order processor.
19 The supplier database includes product identifying information, product inventory information,
20 and product pricing information for multiple independent participating product suppliers, which
21 may include any or all of: participating product manufacturers, participating product distributors,
22 and/or participating product retailers. It may be particularly desirable to include product retailers
23 among the multiple participating product suppliers. Each of the participating product suppliers
24 offers products of a common product category or class. The order database includes order
25 information pertaining to orders received by the multiple participating product suppliers from
26 multiple independent product purchasers, both pending and fulfilled. The multiple product
27 purchasers may include any or all of: participating product manufacturers, participating product
28 distributors, participating product retailers, non-participating product manufacturers, non-
29 participating product distributors, non-participating product retailers, and/or retail product
30 purchasers. The order processor is operatively linked to the databases and programmed for

1 implementing a multiply-integrated method for inventory, sale, and distribution of products
2 according to the present invention.

3 **[0024]** One or more of the foregoing objects may be achieved in the present invention by said
4 multiply-integrated method, comprising the steps of: a) automatically receiving product
5 identifying information, product pricing information, and product inventory information from the
6 multiple participating product suppliers and entering the information into the supplier database;
7 b) automatically receiving, from multiple participating product suppliers, order information
8 pertaining to orders placed by multiple product purchasers with the multiple participating
9 product suppliers; c) automatically entering the received order information into the order
10 database; d) automatically searching, for each order placed by each product purchaser, the
11 supplier database to attempt to locate each ordered product listed in the placed order and
12 available for delivery from a corresponding participating product supplier; e) automatically
13 issuing instructions for delivery, for each order placed by each product purchaser, of each
14 ordered and located product to the product purchaser from the corresponding participating
15 product supplier, thereby fulfilling the order; f) automatically updating order information in the
16 order database pertaining to each delivered product; g) automatically updating product inventory
17 in the supplier database pertaining to each delivered product; and h) creating a financial
18 accounting record for each delivered product.

19 **[0025]** Implementation of systems and methods according to the present invention relaxes the
20 rigid vertically-integrated hierarchical product distribution system depicted in Figs. 1A-1D to
21 yield a multiply-integrated product inventory, sale, and distribution. "Multiply-integrated" here
22 is meant to include vertical, horizontal, and "diagonal" interactions between participants within
23 the system. Product inventory and revenue may flow between any participating product
24 suppliers under the present invention. Orders placed with one participating product supplier may
25 be fulfilled by any other participating product supplier. Multiple product retailers offering used
26 or otherwise non-standard products may thereby offer a wider inventory of such products to a
27 wider group of potential purchasers. Local inventories of the participating suppliers may be
28 dynamically redistributed according to the immediate demands made of the system.
29 Participating product suppliers may realize improved economies of scale, and the system may
30 pool or aggregate inventories and/or orders to leverage improved efficiencies in the system.

1 **[0026]** Additional objects and advantages of the present invention may become apparent upon
2 referring to the preferred and alternative embodiments of the present invention as illustrated in
3 the drawings and described in the following written description and/or claims.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0027] Fig. 1A is a schematic block diagram of a prior system for product inventory, sales, and distribution.

[0028] Fig. 1B is a schematic block diagram of a prior system for product inventory, sales, and distribution.

[0029] Fig. 1C is a schematic block diagram of a prior system for product inventory, sales, and distribution.

[0030] Fig. 1D is a schematic block diagram of a prior system for product inventory, sales, and distribution.

[0031] Fig. 2 is a schematic block diagram of a multiply-integrated system for product inventory, sales, and distribution according to the present invention.

[0032] Fig. 3 is a schematic process diagram of multiply-integrated systems and methods for product inventory, sales, and distribution according to the present invention.

[0033] Fig. 4 is a schematic process diagram of multiply-integrated systems and methods for product inventory, sales, and distribution according to the present invention.

[0034] Fig. 5 is a schematic process diagram of multiply-integrated systems and methods for product inventory, sales, and distribution according to the present invention.

[0035] In each of the Figures, different line styles with arrows are use to indicate the flow of order information (dashed lines with arrows), product (solid lines with arrows), and revenue (dot-dashed lines with arrows).

1 DETAILED DESCRIPTION OF PREFERRED AND ALTERNATIVE 2 EMBODIMENTS

3 **[0036]** For purposes of the present written description and/or claims, the term “system” shall
4 generally denote an apparatus for multiply-integrated product inventory, sales, and distribution
5 according to the present invention, and may also include methods implemented using such an
6 apparatus. For purposes of the present written description and/or claims, the term “online” shall
7 denote an activity which is performed by sending and/or receiving text, data, images, graphics,
8 commands, requests, queries, and so forth over a communications network through an interface
9 device. This may preferably mean using a computer connected to the Internet, but may also
10 include other interface devices (including but not limited to: computers, workstations, terminals,
11 televisions, wireless devices, hand-held or “palm-top” devices, electronic organizers, telephones,
12 wireless telephones, messaging units, and the like; combinations thereof; and/or functional
13 equivalents thereof) and other networks (Internet, Internet 2, next-generation Internet, other
14 successors to the Internet, World-Wide Web, telephone networks, local- or wide-area networks,
15 wireless networks, optical networks, satellite-based networks, and the like; combinations thereof;
16 and/or functional equivalents thereof).

17 **[0037]** Fig. 2 is a schematic block diagram of a multiply-integrated system for product
18 inventory, sales, and distribution according to the present invention, comprising a supplier
19 database 210, an order database 220, and programmed processor 230 operatively linked to the
20 databases 210 and 220. The supplier database 210 includes product identifying information,
21 product inventory information, and product pricing information for multiple independent
22 participating product suppliers, which may include any or all of: participating product
23 manufacturers, participating product distributors, and/or participating product retailers. It may
24 be particularly desirable to include multiple product retailers among the multiple participating
25 product suppliers. Each of the multiple independent participating product suppliers offers
26 products of a common product category or class. Each member of a chain or group of
27 commonly-owned or commonly-franchised product retailers shall not be considered independent
28 within the scope of inventive concepts disclosed and/or claimed herein, but rather each such
29 chain or group shall be collectively designated a single participating entity within the scope of
30 inventive concepts disclosed and/or claimed herein. The order database 220 includes order
31 information pertaining to orders received by the multiple participating product suppliers from

1 multiple independent product purchasers, both pending and fulfilled. The multiple product
2 purchasers may include any or all of: participating product manufacturers, participating product
3 distributors, participating product retailers, non-participating product manufacturers, non-
4 participating product distributors, non-participating product retailers, and/or retail product
5 purchasers. The order processor 230 is operatively linked to the databases and programmed for
6 implementing multiply-integrated methods for inventory, sale, and distribution of products
7 according to the present invention.

8 **[0038]** Databases 210 and 220 may preferably comprise digitally encoded and stored data
9 corresponding to order information, product identifying information, product inventory
10 information, product pricing information, as well as other pertinent information such as product
11 supplier name, location, mailing and/or shipping address, Internet/Web address, email address,
12 and so forth for each of the multiple independent product suppliers, and similar information for
13 product purchasers. Product inventory and/or product pricing information may preferably stored
14 in the supplier database in a search table common to the multiple participating product suppliers.
15 The databases may be stored on any suitable medium or combination of media and preferably
16 include one or more connections, links, and/or interfaces enabling users of the system to access
17 the information in the databases via the programmed processor 230. The system preferably
18 includes a user interface and appropriate data links to enable participating product suppliers and
19 purchasers to interact with the system through processor 230 and implement the methods
20 according to the present invention. In Fig. 2 processor 230 is shown linked to a
21 communications network 290 to enable online access by participating product suppliers and
22 participating product purchasers to the system (i.e., participating product manufacturers 310,
23 participating product distributors 320, and/or participating product retailers 330). Product
24 content providers (not shown) may also be linked to the system.

25 **[0039]** Figs. 3 through 5 are schematic process diagrams illustrating various multiply-
26 integrated methods of inventory, sale, and distribution of products according to the present
27 invention. "Multiply-integrated" herein is meant to include "vertical" (between participants in
28 differing levels), "horizontal" (between participants within the same level), and "diagonal"
29 (between a participant of a level and many participants in other levels) interactions between
30 participants in the system. Each participating product supplier offers products of a common
31 product category or class. A preferred method may comprise the steps of: a) automatically

1 receiving product identifying information, product pricing information, and product inventory
 2 information from the multiple participating product suppliers, which may include any or all of
 3 participating product content providers (not shown), participating product manufacturers 310,
 4 participating product distributors 320, and/or participating product retailers 330, and entering the
 5 information into the supplier database 210; b) automatically receiving, from multiple
 6 participating product suppliers, order information pertaining to orders placed by multiple product
 7 purchasers 340 (which may include any or all of: participating product manufacturers,
 8 participating product distributors, participating product retailers, non-participating product
 9 manufacturers, non-participating product distributors, non-participating product retailers, and/or
 10 retail product purchasers) with the multiple participating product suppliers; c) automatically
 11 entering the received order information into the order database 220; d) automatically searching,
 12 for each order placed by each product purchaser 340, the supplier database 210 to attempt to
 13 locate each ordered product listed in the placed order and available for delivery from a
 14 corresponding participating product supplier; e) automatically issuing instructions for delivery,
 15 for each order placed by each product purchaser, of each ordered and located product to the
 16 product purchaser from the corresponding participating product supplier, thereby fulfilling the
 17 order; f) automatically updating order information in the order database 220 pertaining to each
 18 delivered product; g) automatically updating the product inventory information pertaining to
 19 each delivered product in the supplier database; and h) creating a financial accounting record for
 20 each delivered product (representing a flow of revenue).

21 **[0040]** The gathering from all participating product suppliers (each offering products of a
 22 common product category or class) of order, product inventory, and product pricing information
 23 into common databases and/or common search tables enables any participating product supplier
 24 (including product content providers and particularly including product retailers) to assume any
 25 role within the system (i.e., product manufacturer 310, product distributor 320, and/or product
 26 retailer 330). Systems and methods implemented according to the present invention may enable
 27 exchanges of products and/or revenues between any participating product suppliers, and may
 28 facilitate exchanges between a participating product supplier and substantially more other
 29 participating product suppliers than was possible under prior systems of product inventory, sales,
 30 and distribution. A significant and desirable feature of systems and methods implemented
 31 according to the present invention may be the enablement of “horizontal” exchanges among

1 participating product suppliers, particularly among participating product retailers (“retailer-to-
 2 retailer” exchanges). The commercial interactions enabled by systems and methods
 3 implemented according to the present invention move substantially beyond mere “co-marketing”
 4 agreements to virtually integrate the local product inventories of the participating product
 5 suppliers.

6 **[0041]** Systems and methods according to the present invention may be particularly suitable for
 7 implementation for inventory, sale, and distribution of products in the music, entertainment,
 8 publishing, and/or software fields for distributing music, movies, video programming, books,
 9 magazines, other printed publications, games, programs, data compilations, and other content on
 10 CDs, audio and/or video tapes, DVDs, magnetic media, printed media, and other suitable media.
 11 For implementation of systems and methods according to the present invention in the fields of
 12 music, entertainment, publishing, and/or software, the multiple independent participating product
 13 suppliers may further include product content providers (not shown), including musicians (solo
 14 artists and groups), studios, production companies, actors, actresses, composers, arrangers,
 15 writers, authors, editors, compilers, researchers, and so forth.

16 **[0042]** Delivery of an ordered product (i.e., order fulfillment) may be achieved in several ways
 17 according to the present invention, as illustrated in Fig. 3. Once a product ordered by a
 18 purchaser 340 (typically a retail purchaser, but may also be any participating or non-participating
 19 product supplier) has been located in the local inventory of a corresponding product supplier, the
 20 ordered and located product may be shipped to the product supplier 330 that originally received
 21 the order (consumer indirect fulfillment; transactions 351 and 352 of Fig. 3). The receiving
 22 product supplier may then ship the product to the product purchaser, or may send a notification
 23 to the purchaser that the product is ready to be picked up. Such a notification may be
 24 automatically generated by the system. Alternatively, the ordered and located product may be
 25 shipped directly from the corresponding product supplier to the product purchaser (consumer
 26 direct fulfillment; transactions 353 and 354 of Fig. 3). This may be done with or without the
 27 knowledge of the product purchaser. Concealment of the identity of the fulfilling participating
 28 product supplier may be preferred, as well as limiting access of the fulfilling participating
 29 product supplier to the identity of the product purchaser. A particularly significant
 30 implementation of systems and methods according to the present invention comprises fulfillment
 31 (direct or indirect) of orders received by a first product retailer and fulfilled by a second product

1 retailer (retailer-to-retailer consumer fulfillment; transactions 352 and 353 of Fig. 3). Revenue
2 may be transferred directly between the order-receiving and fulfilling product suppliers
3 (transactions 351 and 352 of Fig. 3) or may be transferred indirectly through mediation of the
4 system 210/220/230 (transactions 353 and 354 of Fig. 3). This latter method for handling
5 revenue flow/financial transactions may be preferred, and shifts the burdens associated with
6 revenue collection and financial verifications from the individual participants to the system.
7 Indirect system-mediated financial transactions may also enable system participants to conceal
8 their identities from other participants (discussed further hereinbelow). While the example
9 transactions of Fig. 3 (and Figs. 4 and 5 described hereinbelow) all involve orders initially
10 placed with a product retailer 330, transactions involving orders initially placed with other
11 participating product suppliers are also within the scope of the system and methods implemented
12 according to the present invention.

13 **[0043]** Systems and methods implemented according to the present invention may provide any
14 individual participating product retailer (or other participating product supplier) with a remote
15 product inventory that may include the collective local product inventories of many or all of the
16 other participating product retailers (and/or many or all of the other participating product
17 suppliers). This potentially vast increase in product inventory comes without the accompanying
18 expense to the individual product retailer of maintaining the entire collective inventory locally.
19 The system according to the present invention may therefore enable a collection of perhaps a few
20 dozen individual local/regional product retailers to provide product offerings as wide as a
21 national chain or a large online retailer. Conversely, systems and methods according to the
22 present invention may enable a participating product supplier, particularly a local/regional
23 retailer, to offer its local inventory to a wider audience of product purchasers, since the
24 participating product supplier may gain access to a geographically far-flung inventory, sales, and
25 distribution system.

26 **[0044]** Systems and methods implemented according to the present invention may enable
27 participating product suppliers, and in particular participating product retailers, to realize
28 efficiencies and/or economies of scale that could not be achieved individually. To achieve
29 operating efficiencies, the system may be programmed to automatically select for fulfilling each
30 order an optimum product supplier available. The figures-of-merit used to select a supplier may
31 include product availability, product price, speed of delivery, shipping/handling fees, and so

1 forth, and may be made available from the supplier database. The system may be further
2 programmed to enable each participating product supplier to independently select which
3 figure(s)-of-merit to consider and target values for those figure(s)-of-merit to be used in
4 selecting fulfilling product suppliers.

5 **[0045]** To achieve economies of scale, order information pertaining to multiple orders received
6 by a product supplier (particularly a product retailer) may be aggregated, and the product
7 supplier database searched in real time for an optimum source (in terms of price, shipping costs,
8 availability/timeliness, and/or other figure-of-merit; as discussed hereinabove) among the
9 participating product suppliers, as in the example depicted in Fig. 4. While a product distributor
10 320 is shown as the optimum source for fulfilling multiple orders received by a product retailer
11 330 in Fig. 4, aggregated orders from any participating product supplier may be fulfilled by any
12 of the participating suppliers as the optimum source, including product retailers. Multiple orders
13 placed at multiple locations of a product supplier, or at a physical location and an online
14 presence of a product supplier (or otherwise remotely placed), may be aggregated in a similar
15 fashion. Both products for fulfillment of orders and products for maintaining/ replenishing local
16 inventory for later shipment or direct sales may be aggregated in order to find an optimum
17 product source. Even more significantly, local inventory replenishment and order fulfillment
18 information from multiple orders from multiple product suppliers (especially from multiple
19 product retailers) may be automatically aggregated in real time, and the system databases
20 searched for an optimum source of products, as in the example depicted in Fig. 5. While a
21 product distributor 320 is shown as the optimum source for fulfilling multiple orders received by
22 multiple product retailers 330 in Fig. 5, aggregated orders from any grouping of multiple
23 participating product suppliers may be fulfilled by any of the participating suppliers as the
24 optimum source, including product retailers. The larger number of products in such a multiple-
25 provider aggregated order may often result in a lower unit cost for the product and/or other more
26 favorable terms, and may not have been available to a single product supplier searching for
27 smaller quantities. Carrying this concept further, product suppliers may actively bid to fulfill
28 orders (individual or aggregated) in real time, with the optimum bid selected for fulfillment.
29 Order aggregation as described above (particularly aggregation from multiple product suppliers)
30 provides incentives for potentially-fulfilling product suppliers to bid to fulfill orders at more
31 favorable terms (lower price, faster delivery, lower shipping/handling fees, and so forth).

1 **[0046]** While there are clear advantages to the various order-aggregation schemes enabled by
2 the present invention and described above, it is also important to enable individual product
3 suppliers (including product retailers) to maintain independence and autonomy. Systems and
4 methods implemented according to the present invention preferably enable competing
5 participating product suppliers to work together without comprising their respective market
6 positions. Systems and methods implemented according to the present invention may therefore
7 enable a participating product supplier to specify an eligible subset among the participating
8 product suppliers for aggregating orders. For example, a product retailer may not wish to
9 aggregate orders with a local rival, but aggregating orders with a retailer in another state may be
10 acceptable. The system may be programmed to automatically take such selections into account
11 when attempting to aggregate orders originating from multiple product suppliers.

12 **[0047]** Similarly, systems and methods implemented according to the present invention may
13 enable: a first participating product supplier to select an eligible subset of the multiple
14 participating product suppliers from which ordered products, listed in orders placed with the first
15 participating supplier, may be delivered to a product purchaser; and a first participating product
16 supplier to select an eligible subset of the multiple participating product suppliers for which
17 ordered products, listed in orders placed with the eligible subset of the multiple participating
18 product suppliers, are available for delivery to a product purchaser. For example, a product
19 retailer may not wish to fulfill orders for or have orders fulfilled by a local rival, while a more
20 distant product supplier would pose comparatively little competitive threat. The system may be
21 programmed to take such selections into account when attempting to locate products for delivery
22 to product purchasers. The system may be similarly programmed to enable a participating
23 product supplier to select: a subset of products available for delivery from other participating
24 product suppliers; and a subset of products available for delivery to fulfill orders placed with
25 other participating product suppliers. For example, a product retailer specializing in children's
26 books and videos would not wish to include adult-oriented products as available for ordering and
27 delivery, and would presumably not select such products for availability from another
28 participating product supplier's inventory.

29 **[0048]** In order to further protect the autonomy of participating product suppliers, systems and
30 methods according to the present invention may be implemented in such a way as to conceal the
31 identities of the participating product suppliers from each other (particularly retailers from other

1 retailers), and also to at least partly conceal the identities of fulfilling product suppliers and
2 product purchasers from each other. For example, a product supplier may wish to conceal from
3 a customer the identity of the fulfilling supplier, so that the customer will not shift business to
4 the fulfilling supplier. Similarly, at least partly concealing the identity of the purchaser from the
5 fulfilling product supplier may hamper efforts by the fulfilling product supplier to lure the
6 purchaser away. Such identity concealment may be imposed on all participating product
7 suppliers and/or purchasers, or may be activated selectively for/by each participating product
8 supplier. Identities could not be completely concealed at all levels of the system, since
9 ultimately the accounting records generated by transactions and exchanges must show where
10 revenues are to be directed. Independent and presumably neutral and impartial system
11 administration could be implemented to insure protection of participating product supplier
12 identities, if desired. Such a centralized administration system could be further programmed to
13 mediate the financial transactions generated by product orders and fulfillment.

14 **[0049]** Systems and methods implemented according to the present invention may be used to
15 achieve dynamic, automated, real-time adjustments to order fulfillment and/or product delivery,
16 product pricing, local and/or remote product inventory, and/or other adjustments among the
17 participating product suppliers in response to changing market conditions, sales trends, product
18 demand patterns, or other conditions. For example, in choosing a participating product supplier
19 for order fulfillment, the system may be further programmed to query the selected product
20 supplier some time after the initial delivery instructions were issued. If delivery has not been
21 initiated for some reason (examples: product not available due to inaccurate inventory
22 information; equipment failure; bad weather; etc), then the system may be programmed to cancel
23 the original delivery instructions and find a secondary product supplier to fulfill the order. The
24 system may be programmed to monitor participating product supplier product local inventory
25 information in supplier database 210 and automatically initiate inventory transfers between
26 participating product suppliers to restore and/or maintain appropriately balanced local inventory
27 levels. Target local inventory levels may preferably be set by each participating product supplier
28 independently of other participating product suppliers. Local inventories thus maintained are
29 available for in-store direct product sales as well as delivery to ordering product purchasers, and
30 in-store direct product sales may preferably be included in the product inventory data in the
31 product supplier database 210 for participating product suppliers offering such direct sales. A

1 participating product supplier having both a physical location and an online presence may
2 achieve integrated management of inventory, sales, and distribution of each. The system may be
3 programmed to monitor sales patterns and to make appropriate adjustments to product pricing,
4 based once again on parameters that may preferably be set by each participating product supplier
5 independently of other participating product suppliers. The databases 210 and/or 220 would be
6 automatically updated to reflect such inventory and/or pricing adjustments. As with other
7 capabilities of the present invention involving interactions/exchanges between participating
8 product suppliers, the system may be programmed to enable a participating product supplier to
9 select a subset of other participating product suppliers for inventory transfers/adjustments,
10 pricing adjustments, and/or other adjustments, and/or to enable a participating product supplier
11 to engage in such interactions while maintaining a concealed identity.

12 **[0050]** These inventory and/or pricing adjustment methods may be particularly useful when
13 implemented on a retailer-to-retailer basis. Another significant implementation would apply to
14 inventories of used, rare, out-of-production, collectible, and/or otherwise non-standard products,
15 wherein supply/demand considerations may create significantly larger price and inventory
16 fluctuations than would be typical for new products, and wherein product sales volumes are
17 likely to be lower than for new products. Such non-standard products are typically acquired by
18 local/regional retailers, but under prior inventory, sales, and distribution systems would only be
19 available for purchase from the acquiring retailer, and each acquiring retailer would be limited to
20 offering for sale its own local inventory of such products. Implementation of inventory, sales,
21 and distribution of such non-standard products according to the present invention enables each
22 acquiring local/regional retailer (or other acquiring participating supplier) to offer for sale a
23 vastly broader inventory of non-standard products (the combined inventory of non-standard
24 products of the participating product suppliers are listed in the supplier database), and to offer its
25 own local inventory of non-standard products to a vastly broader audience of potential
26 purchasers. The system may be programmed to further enable a participating product supplier to
27 accept bids from potential product purchasers for a used, rare, out-of-production, collectible,
28 and/or otherwise non-standard products, and such bids (preferably from multiple bidders bidding
29 at multiple participating product suppliers) may be included in the databases and used (along
30 with previous sale data) by the system to set prices for such non-standard products.

1 **[0051]** The music and video industries offer particularly compelling opportunities for
2 implementation of systems and methods according to the present invention, particularly when
3 applied to used, out-of-production, and/or private-label products. Large chains and large online
4 retailers do not typically deal in such non-standard products, which as a result are substantially
5 restricted to local/regional retailers. Currently there exists no mechanism enabling a
6 local/regional record or video store to offer its inventory of such non-standard products beyond
7 its own audience of customers. Furthermore, there exists no mechanism for enabling a
8 local/regional retailer to find and offer such non-standard products beyond its own local
9 inventory. Implementation of systems and methods according to the present invention radically
10 alters the situation. Product identifying information, product inventory information, and product
11 pricing information for used, out-of-production, and/or private label music and/or video products
12 may be listed in supplier database 210 alongside new products. The local inventory of non-
13 standard music/video products of any participating local/regional retailer is therefore available to
14 other participating product suppliers and may be offered to a wider array of music/video
15 purchasers. Similarly, any local/regional retailer may offer for sale a vastly broader selection of
16 non-standard music/video products to its customers. The potential number of music/video
17 products newly made broadly available through implementation of the systems and methods of
18 the present invention may easily number several hundred thousand titles, compared to the
19 roughly 200,000 titles currently broadly available as new products. A few dozen local record
20 stores implementing the system of the present invention may thereby actively compete on a more
21 level playing field against giant chains such as Sam Goody, Tower Records, Best Buy, Circuit
22 City, Wherehouse, and so on, or against giant online retailers such as Amazon.com,
23 CDNow.com, and so on.

24 **[0052]** Systems and methods implemented according to the present invention may offer further
25 advantages for inventory, sales, and distribution of used, rare, out-of-production, and/or
26 collectible products. It is frequently the case that such items are required in smaller quantities
27 than new products, thereby increasing shipping costs per unit. This may be mitigated in the
28 present invention if a participating product supplier uses the system to provide a so-called “just-
29 in-time” consignment service. Participating product suppliers that have acquired used, out-of-
30 production, private label, or other non-standard products supply the appropriate information to
31 databases 210 and 220. Analysis of databases 210 and 220 for inventory/demand/sales patterns

1 for a non-standard product is used to trigger acquisition on consignment of the product from
2 other participating product suppliers, so that the consignment product supplier always has a
3 ready local inventory of the used, rare, out-of-production, and/or collectible item on hand for
4 delivery along with other, standard products, thereby reducing fulfillment costs associated with a
5 typical widely-dispersed remote inventory of non-standard products. Financial transfers/revenue
6 flow in this scheme may be direct between participating suppliers, indirect and system-mediated,
7 and/or indirect and mediated by the consignment product supplier. The “just-in-time
8 consignment scheme described herein is a variation of the local inventory and pricing adjustment
9 schemes described hereinabove, applied specifically to used, out-of-production, private label,
10 and/or other non-standard music/video products. In addition, apparatus and methods for quality
11 evaluation may be implemented for evaluating used products and appropriately adjusting prices
12 or rejecting damaged/defective products.

13 **[0053]** The present invention has been set forth in the forms of its preferred and alternative
14 embodiments. It is nevertheless intended that modifications to the disclosed systems and
15 methods for implementing a multiply-integrated system for product inventory, sales, and
16 distribution may be made without departing from inventive concepts disclosed and/or claimed
17 herein.
18